THE STRUCTURE OF MODERN INDUSTRY

BY

G. M. COLMAN, M.A.

Staff Tutor for Tutorial Classes, University of London

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FOREWORD

THE Workers' Educational Association is issuing the present volume as an experiment to meet the need for cheap and simple textbooks for the use of students in the more elementary classes. It aims at giving an outline of facts, to serve as a background for a course of lectures. It should also be found useful by individual students, and by groups working without a tutor, as it includes questions for discussion, and suggestions for further reading. The author, who is an experienced W.E.A. tutor, has herself felt the need for this type of textbook, and is, therefore, particularly well qualified to write it. She is alone responsible for its contents, and the W.E.A. assumes no liability for any of the views expressed in it.

The Association hopes to arrange for the publication of further volumes in the same series, if the demand for the present volume justifies such action

INTRODUCTION

Few people set out to study modern industry without having in mind practical questions to which they want answers—"Why are not wages higher and hours shorter?" "Why do prices rise and fall?" "Why are there always people out of work when there are so many who need the things they could produce?" "Why has there been so much unemployment since the War?" These are vital matters, affecting everyone; but too many people jump to conclusions about them with insufficient knowledge; while so complicated are economic problems that very often we cannot see the wood for the trees. To understand and to remedy requires study; and the first step is to know something of the industrial machine itself, that is, of the means whereby our food, clothing, and all the other things we need are produced and are brought to us, often from the ends of the earth. That is the purpose of this little book. It does not attempt to deal with the *effects* of the modern industrial system on those who live within it, or to show whether modern industry satisfies to a reasonable extent the needs of the community. It therefore does no more than mention such questions as wages and conditions of labour, the work of the Trade Unions, overcrowding, unemployment, taxation, and public spending on social services; but aims only at providing a groundwork which will help in understanding them, by describing briefly what the industrial system is.

It is intended to provide the student, not with ready-made conclusions, but with facts on which conclusions can be based. To many of the problems raised, therefore, no solution is suggested; and, at the end of each Chapter, definite questions are given for discussion (or the writing of essays). Further, in a book of this size, the subject can only be dealt with very much in outline. References for further reading are, therefore, included under each Chapter, while there is a Note on Books at the end.

This sketch is intended to set the reader thinking, and to serve as a guide to those who seek further knowledge.

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CHAPTER I

HOW DOES GREAT BRITAIN MAKE A LIVING?

Two hundred years ago or less, the answer to this question would have been: "Almost entirely from her own land." Great Britain was then mainly an agricultural country, her chief manufacture was that of woollen cloth, her only large town was London, she was able to grow her own food and even to sell wheat abroad, in most of the ordinary needs of life she was independent of foreign countries. How enormous a change has occurred since then is obvious to even the most casual observer. *Why* it occurred, what were the causes of that period of rapid change from about 1750 to 1830, which is generally known as the Industrial Revolution, out of which has come modern industry, is outside the scope of this book. But some knowledge of the way in which modern industry has grown up is necessary for a real understanding of the system, or lack of system, under which we now live; and for this the reader must refer to the books on Industrial and Social History mentioned at the end.

If we are to answer the question for to-day we must know how the land of Great Britain is used, how the people occupy themselves, what trade we carry on with foreign countries, and what goods we produce for ourselves.

To start with the land. It is not possible to give

exact figures of the area of land occupied by towns, but it is estimated, that of the 37 million acres of England and Wales, less than four million are built over. Of the 19 million acres of Scotland, a still smaller proportion would be urban. With this surprisingly small area of town land, there naturally goes a very high degree of concentration of the population in the towns. Roughly, about four-fifths of the population occupy about one-tenth of the land surface. This means that in many districts, especially the poorest, there is intense overcrowding. In the County of London there was, in 1921, an average of 60 persons to the acre, while in Bethnal Green, for example, there were 154 to the acre, in Southwark as a whole, 163, in one part of Southwark, St. John's Ward, 249. A large part of Liverpool had a population of 100 persons to the acre, and one Ward, Netherfield, 254. These conditions are still much the same, and it is hardly necessary to add that they involve a disastrous overcrowding of house-room.

As to the rest of the land, the figures for 1928 were as follows. Of the 56 million acres of Great Britain, 13 million were arable land, used, that is, for growing corn, potatoes, turnips, etc.; nearly 17 million were permanent pasture for live stock; 14½ million were rough grazing, principally for sheep. No returns were given for the remainder, but, in addition to urban land, it probably included two to three million acres of woods and plantations. Thus, less than three-fifths (about 30 million acres) of the land of Great Britain is cultivated, under crops or permanent pasture, showing a decrease of about two million acres as compared with the years just before the War.

Turning next to the population, it is interesting to note that in 1921, the year of the last census, only just over half the total number of people of ten years old and over were in definite occupations, as either employers or employed. The remainder would be accounted for largely by children at school, retired people, and working housewives (who are not officially recognised as "occupied").

For up-to-date figures of the numbers of persons employed, as wage-earners or salary-earners, in the different industries of the country, one must go to the returns made each year in the *Annual Report of the Ministry of Labour* (H.M. Stationery Office) of the numbers insured under the Unemployment Insurance Acts. These show that the industries in which the largest numbers of people were employed in 1929 were as follows:

Coal mining	1,075,000
Metal manufacture (pig-iron, steel, tin plates, etc.)	324,000
Engineering (including motors) and ship-building	1,253,000
Metal trades (pipes, electrical cables, etc.)	526,000
Textiles (cotton, woollen, silk, hosiery, etc.)	1,232,000
Clothing trades, including boots and shoes	556,000
Printing and paper trades	382,000
Food manufacture, breweries, tobacco	501,000
Building trades	969,000
Shipping, docks, road transport, etc.	682,000
Distributive trades	1,646,000
National and Local Government services	383,000
Hotels, boarding houses, and clubs	329 000

The Unemployment Insurance Acts cover nearly 12 million people, but do not include agricultural labourers, private domestic servants, or railwaymen on the permanent staff of the railway companies. The latest estimate obtainable of the number engaged

in agriculture is 770,000 (regular workers), and in private domestic service 1,149,000.

The relative importance of different occupations is, of course, continually changing. During the last few years, for instance, there has been a considerable increase in the number of people engaged in the newer industries, such as artificial silk, electrical engineering, motors, and in the distributive trades; while there has been a decrease in many industries which are largely dependent on the export trade, such as coal-mining and ship-building, and in others affected by changes in people's wants, such as carriage and cart building, and lace making. The number of regular agricultural workers has gone down by about 45,000 since 1921.

Thus the great majority of the wage-earners of the country are engaged in industry and commerce, and agriculture no longer comes first in the list of occupations. They are town-dwellers, as already pointed out. Further, over half the population is concentrated in five great industrial districts—Greater London, the Black Country, Lancashire and the West Riding of Yorkshire, South Wales, and the industrial area of Scotland round Glasgow and Edinburgh.

The third thing we must know if we are to answer the question at the head of this chapter is what trade we carry on with foreign countries, and what goods we produce for ourselves. The table given on p. 11 shows roughly what are the most important goods we produce—food and drink, coal, iron and steel, engineering products, ships, cotton and woollen cloth, clothing, and so on. Most of these we use ourselves, but a large part we sell abroad, that is export to other countries. The value of

these sales in 1929 was £730,000,000.[1] On the other hand, we buy large quantities of goods, that is import from other countries, and the value of these purchases in 1929 was £1,112,000,000.[1] Why do we do this? Many people think that purchases from abroad mean less employment for British workers, and that we ought, therefore, to make these things for ourselves. This raises the whole question why there is trade between countries, instead of each country being self-supporting. At bottom, foreign trade rests on the fact that since each country can produce certain things better than others, it is to its advantage to produce those things and sell them abroad, in return for the things which it cannot produce at all, or which other countries can produce better than it can.

Why can each country produce certain things better than others? First and most important are differences in climate and in the resources of nature, especially in supplies of minerals. In the climate of Great Britain, for example, neither cotton nor tea can be grown; but, on the other hand, we have coal which is some of the best in the world. Then there is the special skill acquired by workers as the result of long experience—the skill of the cotton operatives of Lancashire, for instance, was an important factor in building up Great Britain's position as the largest exporter of cotton cloth. There is, too, an advantage in a country specialising in the manufacture of certain goods on a large scale, perfecting its skill in certain directions, rather than producing smaller quantities of everything—

[1] These figures omit the value of goods imported and then at once re-exported, and include only imports retained, and exports of British productions.

just as a house will be built more quickly and with better workmanship if the bricklayers, carpenters and others stick to their own jobs all the time than if they all do a little of everything.

Thus by specialising on the things which it is best fitted to produce, and exchanging them for the products of others, each country can get a better return in real wealth from the use of its land and the work of its people. We do not export for the sake of exporting, and imports are not an attack by "the foreigners" on our prosperity—we export in order to buy from abroad the things which can be produced there to greater advantage, since in the end goods bought from abroad must be paid for by goods sold abroad. This is the sound general principle of foreign trade—certain weaknesses in our own position must be noted later.

If now we look at the list of the principal British imports and exports, published monthly and yearly in the *Board of Trade Journal* (6d. weekly, H.M. Stationery Office), we shall see that the larger part of our purchases abroad consists of food, and raw materials, such as raw cotton and wool, to be made up into manufactured goods; and that the larger part of our sales abroad consists of manufactured goods. To take our imports first. In 1929 nearly half the total (£510 million) consisted of food, drink, and tobacco, the largest single items being grain and flour and meat. Raw materials accounted for just over a quarter (£285 million), the largest items here being raw cotton, wood, oil seeds, oil, raw wool, and iron and other ores. Again just over a quarter of the total (£305 million) consisted of manufactured articles, the largest items in order of importance being iron,

steel, and other metals, manufactured oils and fats, cotton and woollen yarn and cloth, clothing, machinery, paper, chemicals. That many of these things, such as iron and steel and chemicals, though classed as manufactured goods, are the material of further manufacturing processes in this country, should be kept in mind when considering a policy of protection.

Turning now to our exports, we find that one-thirteenth part only consisted in 1929 of food, drink, and tobacco; and about one-tenth only of raw materials, by far the largest item being coal. Manufactured articles accounted for the rest, £574 million out of a total of £730 million; the most important being cotton yarn and cloth (£135 million), iron and steel, machinery, woollen yarn and cloth, and vehicles, including locomotives, ships, and motors.

These figures show that, in her foreign trade, Great Britain is, as stated above, a buyer mainly of food and the materials of manufacture, and a seller mainly of manufactured goods. This trade relation to the rest of the world grew up last century. Great Britain had certain natural advantages which fitted her to develop rapidly as a manufacturing and trading country—supplies of good coal and of iron ore, a large population, a large merchant and shipping service, for example. For a number of reasons other countries went through their period of "industrial revolution" later than Great Britain, which therefore had a start of many years in the building up of modern industrial methods. Wheat could be supplied more cheaply from America than it could be grown here, in the large quantities needed for a multiplying population; raw materials, such

as cotton, and many foodstuffs, such as sugar, had to come from warmer climates. Thus Great Britain became the "workshop of the world," and other countries the suppliers of a large part of her food and materials, buying in return her manufactured goods.

This state of affairs could not go on for ever, though British business men may have thought it could. Before the end of the nineteenth century Germany and the United States of America were fast developing their own industries; while during the war the process went on even more rapidly, not only in the United States and in European countries, but also in the East, especially in Japan. The result is seen in our foreign trade. We are to-day buying more and selling less than we were before the war; and if the figures are studied in detail it will be noticed that our purchases abroad of *manufactured* goods are going up more rapidly than our purchases of the *materials* of manufacture.

This is a serious situation, and may involve a great and permanent change in our trade. Great Britain is no longer the "workshop of the world": other countries need our manufactures less than they did, because they are producing many more of their own. If we can sell less abroad we must buy less. In that case, in what directions can we cut down our purchases, and how should we do it? This question must be left for discussion; but it is important in this connection to consider whether we could not grow more of our own food. Detailed figures cannot be given here, but it may be noted that of our consumption of those foodstuffs which are grown in this country, such as wheat, meat, and dairy produce, less than half (45 per cent.) is actually produced here, the rest being imported.

There are two other points on which something must be said in this chapter. The reader will have noticed that in 1929 Great Britain bought from abroad more than she sold, to the extent of over £350 million, and may have concluded either that the difference was paid in gold, or that the country is rapidly approaching bankruptcy. Such an excess of imports over exports has existed for very many years, and the explanation is that the figures given refer only to *goods* bought and sold. In addition to selling goods, Great Britain does a large carrying trade in her ships for foreign traders; while her bankers also perform certain financial services for foreigners. Further, money is invested abroad from year to year by British people, the total of such investments now being very large. For the carriage of goods and for financial services payment must be made, and interest is due on foreign investments. If the income from these three sources, usually known as "invisible exports," is added to the value of goods sold, it will be found that the total sum due to Great Britain from abroad is greater than the amount due to be paid by her for goods bought. Taking, therefore, the trade of the country as a whole, in goods and services, there is from year to year a credit balance, which, according to the estimate of the Board of Trade, amounted in 1929 to about £150 million.

The second point is that a study of an economic map of the country will show that there is a marked tendency for industries to concentrate in particular localities, as for example cotton in Lancashire, boots and shoes in Northamptonshire. This is due to much the same causes as the division of production between countries—climate, supplies of

coal, or water-power, nearness to raw material, or to convenient means of transport, and so on. The damp climate of Lancashire, for instance, had much to do with the development there of the cotton industry; while the presence of coal, of certain kinds of clay, and nearness to water transport, were reasons for the growth of the pottery industry in North Staffordshire. Here, too, specialisation is important, as it is in trade between countries—if an industry is carried on on a large scale in a certain district it is worth while, for example, to build up specialised commercial and financial services, and for other industries to be established there for the supply of special machinery.

Reading:

LEHFELDT, R. A. *Descriptive Economics*, Chaps. I, II, IV, and pp. 54–57. Oxford University Press, 1927. 2s. 6d.

COLE, G. D. H. *The Economic System*, Chap. I. W.E.A. Outlines. Longmans, 1927. 1s.

The Labour Year Book, 1930, Sections 10 and 6, for figures relating to the use of the land, and to foreign trade. Labour Publications Department, Transport House, Smith Square, London, S.W.1. 3s. 6d.

Government publications, such as the *Board of Trade Journal*, can be obtained from H.M. Stationery Office, Kingsway, London, W.C.2, or through booksellers.

For discussion:

1. Would it be a good plan for us to grow more of our own food? If so, what kinds of food-growing should be increased?

2. Make a list of the principal occupations in your own district, and consider the reasons for any special industries being carried on there.

3. Make a list of some of the things you use every day, find out whether they are produced in this country or abroad, and why.

4. Would it be advisable to cut down our imports by means of import duties? If so, on what goods would you suggest that such taxes should be placed?

CHAPTER II

WHO CONTROLS INDUSTRY?

THE purpose of industry is to produce real wealth—the food; clothing, houses, books, means of transport, and the many other things which people need to satisfy their wants. For the production of wealth two things are clearly essential, the use of the land and its resources, and human labour. We have seen how Great Britain uses her land, and how her people are occupied, but we have said nothing so far about a third essential, capital. Capital may be defined as the tools produced by human labour from the resources of the earth, and used by human labour for the production of more wealth. Under the term capital must be included simple tools such as hammers and nails, complicated machines such as looms, factories and workshops, the roads, railways, and ships used for transporting goods, gas and electricity works, and innumerable other means of production. We may say, therefore, that the real wealth produced by human labour takes two forms—capital goods, or the tools of production, such as those mentioned above; and consumable goods, ready for use, such as boots and shoes. There is no hard-and-fast line between the two, but it is necessary to make a rough division.

Human labour without the use of capital can produce very little indeed; while human labour with the use of modern machinery, driven by power, can produce infinitely more than with the old hand tools. Compare, for instance, the output of four

modern power looms, minded by one weaver, with that of the weaver using a hand-loom. But the tools of modern industry are very expensive; they require much time and skill to make; power is needed to drive them; and it is, therefore, quite impossible for each worker to possess his own, as he could two hundred years ago, in the days of hand-tools. This being so, who are the owners not only of the land but also of the capital of the country, without access to which their labour-power is useless, is a matter of vital importance to the workers.

It is not possible to state exactly to whom the land of Great Britain belongs. The Crown owns about 218,000 acres, the War Office 213,500, the Universities and Colleges of Oxford and Cambridge 291,000, English and Welsh County Councils and County Borough Councils 348,000, while a considerable area belongs to the Duchies of Cornwall and of Lancaster and the Ecclesiastical Commissioners. Only a very small proportion of the total is thus accounted for, and of the rest it has been estimated that a few thousand persons own about half. Examples of very large individual ownership are the Duke of Sutherland with about one million acres, and the Duke of Richmond with 287,000.

With regard to minerals, including coal and iron-ore, these belong to the owners of the surface of the land under which they lie, to whom payment, called a royalty, is made for every ton mined. The present yield of coal royalties is about £6 million a year.

Turning now to the capital of the country, this is owned and used partly by the community, through the State and Local Authorities; partly by the

Co-operative Movement; mainly by individuals, as private property.

The State carries on comparatively few undertakings of an industrial character. In the management of these, two main principles have been adopted. Some, such as the Post Office, the Royal Dockyards, and the Office of Works, are under State Departments, with Ministers directly responsible to Parliament. The second principle, of which the two main examples are the British Broadcasting Corporation and the Central Electricity Board, is that of control by special Boards, officially appointed, but only indirectly responsible to Parliament.

Local Authorities now operate directly a large number of industrial undertakings, with plant worth nearly £700 million. In 1928, of 490 electrical generating stations in Great Britain, Local Authorities owned 267, with 63 per cent. of the total output of electricity; of 774 gas undertakings they owned 319, with 36 per cent. of the total sales; of 221 tramway undertakings they owned 161, carrying 88 per cent. of the total number of passengers. Municipal enterprise also includes water supply, bus services, and markets and slaughter-houses.

Another form of local public undertaking is the special Board set up to control a particular local service, such as Dock and Harbour Boards, referred to again later, and Water Boards. Of the latter, the most important is the Metropolitan Water Board, appointed by the London County Council, various other municipal councils, and the Thames and Lee Conservancy Boards.

Co-operative enterprise must be put in a class by itself, as it differs from public enterprise in that its capital is owned by and is under the control of the

individual shareholders, not of the general public; and from private enterprise in the method of control of its capital, and the use of the trading surplus. By far the most important part of the Co-operative Movement in this country is the Retail Distributive Societies, with their federal trading organisations, the English and Scottish Wholesale Societies. These Societies differ from the joint-stock company form of private enterprise in the limitation of the holding of share capital to £200 per member; and in the principle of democratic control, through the provision that each shareholder has one vote only, and not, as in the joint-stock company, voting-power according to the number of shares held. They also differ in the use of the trading surplus, a fixed rate of interest being paid on share capital, instead of a rate varying with the profits made, while by far the larger part of the surplus goes to the members in proportion to the amount of their purchases. In 1928, for example, of a total surplus of £25 million, £21 million was returned to the members as dividend on purchases. In addition to their main business of wholesale and retail trading, the Societies carry on many other activities, including tea-growing, farming, the manufacture of foodstuffs, soap, clothing, boots and shoes, furniture, and so on. The English Wholesale Society owns a small fleet, and also a coal-mine. The capital resources of the Retail and Wholesale Societies in 1928 amounted to just over £200 million, the value of their productions to £80 million, and their sales to £334 million.

The Co-operative Productive Societies are relatively unimportant. In theory the workers engaged therein, as individuals, own the capital, elect the

management, and decide the distribution of the surplus. Actually, however, since the workers themselves have not been able to raise a sufficient amount, the larger part of the capital is held by other individuals and by organisations, mainly Co-operative Retail Societies. The principle of one member one vote is observed. The Societies are engaged in printing, boot and shoe making, etc.

The industrial activities of public bodies and of the Co-operative Movement are important, but they are as yet very limited in extent, and by far the larger part of the capital of the country, as well as of the land, is owned as private property, and used for the private profit of the owners. This form of ownership and use of capital is known as "private enterprise" or "capitalism."

Reading:

LEHFELDT. *Descriptive Economics*, Chap. III.
COLE. *The Economic System*, Chaps. II and III.
The Labour Bulletin, June 1930, for figures of Municipal Trading. Labour Publications Department. Monthly, 3d.
ENFIELD, H. *Co-operation*. W.E.A. Outlines. Longmans, 1927. 1s.

For Discussion:

1. Consider some of the advantages and disadvantages of State enterprise as compared with private enterprise.

2. Taking your own town or district, outline a plan for dividing its industrial activities between the Co-operative Society (or the C.W.S.), the Local Authority, and the national Government.

3. Work out the differences between the Co-operative Society in your district and a multiple shop, such as the Home and Colonial Stores, with regard to organisation and management, service to the customer, and conditions of the staff.

CHAPTER III

PRIVATE ENTERPRISE

As already pointed out, the machinery and other plant required for the carrying on of modern methods of production is in many industries very expensive: especially is this so in the "heavy industries," such as iron and steel and ship-building. It is cheaper to turn out machine-made goods in large quantities than in small: it would be wasteful, for example, for a small firm to set up the expensive specialised machinery required for the mass production of boots, since the total output would probably not be large enough to keep each machine employed full time. Further, in a large factory, workers can be engaged continuously on specialised jobs, such as coating chocolates, and so acquire greater skill and speed. While the profits of industry are often great, they may be a long time in coming, even two or three years or more, as in the sinking of a new coal-mine, and large funds are required to cover this waiting-period. Lastly, with the world-wide trade of to-day, the big firm is at an advantage in buying its materials and in selling its goods, since amongst other things it can afford to employ highly skilled buyers, sales managers, and travellers; lower transport rates can usually be secured for large consignments; it can more easily wait for the right moment to buy or to sell; and it can spend more on advertising.

Thus the nature of most of modern production and trade makes necessary the business with large

resources, running often into millions of pounds, and the big business tends more and more to dominate industry. At the same time small firms still exist in large numbers and seem unlikely to disappear. They are of course very numerous in most branches of the retail trade, in boot repairing, tailoring and dressmaking, baking, and in similar types of business. Here, where small capital is required, where personal attention counts, where it is important to be near customers, the small business meets a need, and may be really efficient. Even here, of course, there is fierce competition from the big concern with its many branches, such as the "multiple shops" in the grocery and boot and shoe trades; but the "one-man business" still has something to recommend it, and the desire for independence helps to keep it alive.

In other directions the small firm is often an out-of-date survival. While they can find no place in "heavy industry," relatively small businesses are numerous in many branches of manufacture, such as engineering and textiles, and are generally condemned as inefficient. The *Report of the Government Committee on the Cotton Industry*, published in July 1930 (Stationery Office, 6d.) states, for instance, that larger units are necessary in the spinning and weaving sections of the industry, in order to allow of improved methods of production, such as the use of up-to-date machinery, and also of marketing. On the other hand, the firm working on a small scale is usually better where very special skill is required, as in the making of scientific instruments; or where originality of design is demanded by the buyers of expensive jewellery, furniture, etc.

This discussion of the scale of private enterprise

leads on to the question of combination between firms, since it is largely by that means that business has kept pace with the needs of modern industrial methods. It is advisable to use the term "combine" in a general sense, to include any degree of sacrifice of independence by firms, for the sake of their mutual advantage. It includes the more or less formal agreement between otherwise independent firms to act together for certain purposes, such as the limitation of output or the sale of goods. An example of this type of combine is the Indian Tea Association, which seeks to regulate prices, when it is considered necessary, by means of crop restrictions. It also includes amalgamation, that is the coming together of firms to make a new unit, involving complete loss of independence. Recently, for instance, the International Tea Company acquired by amalgamation complete control of the Star Tea Company's shops and other assets; and two large iron, steel, coal, and engineering concerns, Bolckow Vaughan & Company and Dorman, Long & Company, amalgamated with each other. Within these two main groups of combines, that is federations and amalgamations, there are many sub-divisions, but they cannot be described here. It must, however, be pointed out that in some cases combination takes place between firms doing the same kind of work, such as the Indian Tea Association, mentioned above; while in others it is between firms engaged in different stages of the production of the same article. The first type is usually called "horizontal" combination, and the second "vertical." An example of the latter is the recent agreement between Baldwins Ltd. and Guest, Keen & Nettlefolds, Ltd., as the result of which a

new company has been formed which will own and operate limestone quarries, iron ore and coal mines, coke ovens, blast furnaces, steel works, and rolling mills, all stages in the production of heavy steel goods.

Combination is not a new movement. It has been an important tendency of capitalism, in this and other countries, since the latter part of last century. Since the war, however, it has grown very rapidly, and now it would be difficult to find any department of production, trade, or finance which is untouched by it. What are the reasons for this development? The first and most important is the desire of capitalists who are producing the same things to cut out competition between themselves, and so make it possible to reduce their joint output to such a level that a "reasonable" price can be charged. It is the policy of the Indian Tea Association, for instance, to adjust output to demand with this end in view. The second reason is that, under modern conditions, a higher degree of efficiency and lower costs can generally be secured by working on a large scale than on a small. Some of the advantages of the big firm were described at the beginning of this chapter. In addition to those mentioned, there is much to be gained from bringing under one control all the stages in the production of a given article, so as to make sure of supplies of raw materials, and secure a closer linking up between the different stages. This was no doubt one of the main purposes of the agreement between Baldwins and Guest, Keen & Nettlefolds, referred to above, and it is one of the great advantages of vertical combination.

Chiefly in order more effectively to control competition, and to secure supplies of raw material,

combination is becoming increasingly international. For example the Swedish Match Corporation, with which is connected the British Match Corporation (including Bryant & May), has interests in over forty countries, and controls about 80 per cent. of the world's output of matches; while some years ago Lever Brothers considered it necessary to acquire control of the sources of supply in Africa of the raw material of soap-making.

Regarded as a method of increasing industrial efficiency, combination is an aspect of the wider movement of rationalisation. It will be as well, therefore, to consider its importance to the community later, in Chapter VII, "The Rationalisation of Industry."

So far we have discussed the tendency for the operations of private enterprise to grow in scale, and have said nothing about the methods by which the individual owners of capital exercise their control over industry. In many small businesses the whole of the capital is owned by one man, who himself acts as manager; in others, it may be owned by two or more partners, some of whom may take no active part in management. By far the most important form of private enterprise is, however, the joint-stock company, the nature of which must be discussed in the next chapter.

Reading:

Lehfeldt. *Descriptive Economics*, Chap. V.

Colman, G. M. *Capitalist Combines.* W.E.A. Outlines. Longmans, 1927. 1s.

Labour Year Book, 1930, Section 4, for details of new combines; and Section 9, for newspaper amalgamations.

For discussion:

1. Make a list of the small shops in the district, classified as drapers, grocers, tailors, etc., and consider whether or not big

stores and multiple shops (including Co-operative Stores) would meet the needs of customers better.

2. Would it be desirable to attempt to break up the big combines and restore free competition? If so, how could this be done?

3. Is combination a danger to the Trade Union Movement?

CHAPTER IV

HOW IS INDUSTRY FINANCED?

"CAPITAL" has been defined as "the tools produced by human labour from the resources of the earth, and used by human labour for the production of more wealth"; it has been explained that by far the larger part of the capital of this country is the private property of individuals; and in the last chapter some description was given of its management to-day in the making of private profit. In considering now how individual capitalists use their property in industry, some common term must be found for the innumerable forms of capital, since it is impossible to refer continually to machinery, electrical plant, locomotives, etc. The capital employed in carrying on industry is usually expressed in money, and "money-capital" will therefore be used here as the common term required. The money-capital of a business means, then, the money value of its capital goods, its factories, machines, its stocks of material, etc., and we have next to see how these things were brought under its control.

In the case of the one-man business or the partnership, where the necessary funds are provided by the owner himself, or by the partners, the problem

is not difficult. As already explained, however, the joint-stock company is far more important, and in order to show how it secures its money-capital some account must be given of the joint-stock method of carrying on business.

The money-capital required to-day in the greater part of production and trade is much too large to be supplied by single individuals; while the risk is often too great, and the period of waiting for a return too long, to be borne by individuals. To these facts mainly the joint-stock method owes its importance. The principle, as the name implies, is that of a "joint-stock," or "common-stock," of money, supplied by a number of persons, for the purpose of carrying on business as a company. These persons receive shares in the company according to the amount of money they contribute. "Ordinary" shares carry with them the control of the business, each shareholder having voting power equal to the number of shares he holds. They receive a return known as a dividend, varying with the profits made after all expenses have been met. The holders of "preference" shares usually have only limited voting rights; they receive generally a fixed rate of interest, which must be paid before the ordinary shareholders get anything, and may be "cumulative," that is, if not paid one year is carried forward to the next. The principle of "limited liability" is now nearly always adopted—if a company goes bankrupt, a shareholder is liable to lose only the face value of the shares he has bought, and there can be no further claim on him. Shares may be issued with a face value of any amount—10s., £10, £100—but only whole shares, not fractions, can be bought. Stock, on the other hand, a much

less common form of company security, can be bought in any odd amount, say £53. 16s. 4d.

There are two main types of joint-stock company, public and private. A public company must consist of at least seven shareholders, but there is no upper limit, and the total may run into many thousands. The shareholders of Lloyds Bank, for instance, in 1924 numbered about 56,000; of Vickers Ltd., in 1926, 70,000; whilst the L.M.S. Railway Co. in 1926 had 386,000 shareholders. The value of the shares held by many of these people is in consequence very small. Each of the ordinary shareholders is a part-owner of the business, and the general meeting of shareholders is by law the controlling body of the company. In practice, however, this meeting usually does little more than elect the Chairman and Board of Directors, and approve their Annual Report and proposals for the distribution of profits, whilst the real control is in the hands of the Board.

A private joint-stock company is, in many ways, similar to a public company, but there are certain important differences. It may consist of two shareholders, but must not have more than fifty. It cannot offer its securities for sale to the general public, and the sale of shares by the shareholders is restricted; while, on the other hand, it need not submit an annual balance-sheet to the Registrar of Joint-Stock Companies. Thus it has the advantage over the public company of greater secrecy, and it is easier for a small number of persons to keep control; but it has a disadvantage in that it cannot raise such large sums of money.

Joint-stock companies also raise money by the sale of debentures. The buyers of these are, how-

ever, creditors of the company, not part-owners, receiving a fixed rate of interest, which counts as part of the costs of production, and must be paid before either preference or ordinary shareholders take anything. When a company wishes to increase its money-capital, it has to decide whether it shall do so by the sale of shares or of debentures, and the chief factor influencing its decision will generally be the state of trade. When trade is good the public will want a chance, as shareholders, of taking part in the profits thereof; while when trade is bad they will want the security of a fixed rate of interest, through the purchase of debentures. Thus in times of good trade the issue of shares is generally much larger than the issue of debentures, and in times of bad trade the opposite is the case. In 1919, for instance, the boom-year after the war, of the total volume of securities issued by companies 90 per cent. consisted of shares, and 10 per cent. of debentures; while in 1922 and 1923, years of depression in trade, the proportions were 51 per cent. and 49 per cent.

By the sale of these different types of securities, then, companies raise the larger part of their money-capital. They raise thus funds of which they require the use for long periods, which they want to spend on lengthy operations, where the return may be slow, such as the sinking of pits, the building of railways or factories. They also, however, need money for shorter periods, as for the purchase of materials, for which it would not be worth while issuing securities, and this they usually borrow from the banks, in the form of advances and overdrafts, backed by guarantees of repayment. A loan is made by a bank by crediting the borrower in its

books with the amount of the loan, giving him the right to draw cheques on it up to this amount. In this country the banks seldom purchase company securities, but they lend large sums to companies and other businesses for short periods, normally six months. This gives them a considerable amount of power over industry, and enables them to bring pressure to bear if they wish.

There is one other source from which companies can secure money-capital. Having met all their costs of production, including interest on debentures, bank loans, etc., they can use part of their profits for development purposes, such as the purchase of new plant. No estimate can be given of the amount thus used, but it is probably considerable. On the other hand, companies are often guilty, in times of good trade, of using all or too large a part of their profits in paying high dividends to the shareholders. This happened in the boom period after the war, with the result that many companies failed to keep pace with the improvements made by others in industrial methods.

Leaving now, for the moment, the financing of private enterprise, and turning to the industrial activities of the State and Local Authorities, we find that the money-capital required is raised partly from taxes and rates, partly from the sale of securities. The Road Fund, for instance, comes mainly from taxes on vehicles using the roads; but the State also borrows for industrial purposes, such as the development of the telephone and telegraph services. The Local Authorities borrow largely, for the financing of electricity, gas, and other undertakings. In 1929, for example, they had borrowed £71 million for gas undertakings, of which £39

million had been repaid; and £85 million for tramways, of which £47 million had been repaid.

The State and Local Authorities clearly cannot issue shares, since they cannot make individual investors part-owners of their ventures, which belong to the community generally. They therefore borrow by the sale of securities of the type of debentures, on which a fixed rate of interest is paid. The State, like joint-stock companies, also needs to borrow for short periods, and this it does largely by means of Treasury Bills, which are promises to repay loans, say in three months, issued by the Treasury. Treasury Bills are bought mainly by the banks, and advances are also made by the Bank of England.

The Co-operative Societies raise most of their money-capital by the sale of shares. In 1928 the total loan and share capital of the Retail Distributive Societies amounted to £119 million, and of this £99 million was share capital. Most of the holders of loan capital are also shareholders, and thus it may be said that the Societies are financed almost entirely by their own members. As already pointed out, a fixed rate of interest is paid on shares, by far the larger part of the trading surplus being distributed in the form of dividend on purchases.

Co-operative Societies increase their membership, and so their money-capital, by the propaganda efforts of existing members, and by advertisement of the advantages of co-operative trading. Private joint-stock companies, as stated above, may not offer their securities for sale to the general public, and so must raise their money by private negotiation. On the other hand, when new public joint-

stock companies are formed, or when existing public companies, the State, or Local Authorities, wish to raise new funds, their securities are offered for sale to the general public, through various financial agencies, including the banks.

Most people would be very reluctant to buy securities, either shares or debentures, unless they could sell them easily, since they could not afford to lock their money up indefinitely. The securities of Co-operative Societies and private joint-stock companies can only be exchanged by private negotiation; but for the exchange of the very much larger volume of securities of public companies, the State and Local Authorities, there is a central organisation, the Stock Exchange, where purchases and sales can usually be carried through freely. It should be noted that once securities have been issued, that is sold to the public, by the company or public authority concerned, and the purchase-price received, however often they afterwards change hands makes no direct difference to the issuing body.

Given an economic system where most capital is privately owned, the development of modern large-scale industry would have been impossible had not some method been devised of bringing together large numbers of individual capitals under single control for the carrying on of production and trade. This method was found in the joint-stock company. So important is the joint-stock method to-day that the larger part of the property of individuals consists, not in the direct ownership of capital goods, such as small workshops and machines, and of land, as it used to, but in claims on the earning-power of companies, in the form of securities. For instance

of the total value of the estates left by persons dying in 1928–29, 33 per cent. consisted of joint-stock company securities, while 21 per cent. consisted of Government and Municipal securities. With this change in the form of private property goes the growing separation between the ownership and the management of capital, since the shareholder in a joint-stock company, as already pointed out, delegates his powers to the board of directors and the paid managers.

Again, given the joint-stock method of carrying on production and trade, it is necessary to have some form of organisation for issuing securities in the first place to the general public, and for arranging subsequent exchanges between the holders. This organisation is at present provided by the various financial agencies which together make up the market for new issues, and by the Stock Exchange. Does it follow, however, that it is the best form of organisation? Are there not too many people engaged in it, involving overlapping and waste of labour? Is it desirable that the public should be attracted to invest by their estimates of the profit-making capacity of companies? These estimates are often at fault; and even if they are not it means that frequently a useless concern which promises large profits can raise easily all the money it wants, while a company engaged in a necessary but much less profitable form of production, such as coal-mining, finds great difficulty in securing new funds. On the Stock Exchange, too, there is an enormous amount of speculative buying and selling of securities, resulting frequently in heavy losses to individual investors. A great deal more could, of course, be said on this important

question, but there is not space, and it must be left for further reading and for discussion.

Reading:

LEHFELDT. *Descriptive Economics*, Chaps. X and XI.
COLE. *The Economic System*, Chaps. IV and V.
Labour Year Book, 1930, Section 4, for figures of security issues, share prices, etc.

For discussion:

1. It is said that a joint-stock company "seeks its dividends without reference to those humane instincts which prompted the private trader." Is this true? If it is, are there compensating advantages in the company method of carrying on business?
2. Find out how the Local Authority in your district raises the money needed for its various activities, and consider whether better methods could be adopted.
3. Is the growth of the Co-operative Movement seriously hindered by the difficulty of raising money-capital?

CHAPTER V

BUYING AND SELLING

REFERENCE has already been made to the principle of specialisation—it has been explained that the tendency for countries to specialise on the things they are best fitted to produce is the basis of foreign trade; and that one of the advantages of the big business is that it can find full-time employment for specialised machines and workers. A little more must be said about this principle here, since it is one of the most important in the structure of modern industry. Specialisation or division of labour began when, in the very early days of economic development, the individual ceased to be self-supporting, ceased doing every job for himself, and began to spend his time on a single form of industry, such as

the making of cloth. Later, industries themselves were sub-divided, and different workers specialised for example on the processes of spinning, weaving, dyeing, and so on. Further sub-division accompanied the introduction of machinery, until most workers are to-day engaged on highly specialised jobs, each of which is but a very small part of the process of producing a finished article. The principle applies not only to manual labour but also to the work of management, which is divided between the works manager, sales manager, buyer, etc. In agriculture, and in the professions, such as medicine and teaching, the tendency towards specialisation has not gone so far as in manufacture, but in these directions, too, it shows itself.

The basis of the whole thing is that "practice makes perfect," that constant occupation on the same work, whether it be riveting steel plates or managing the sales department of a big firm, will increase skill and speed, and so result in the production of a greater quantity of wealth. This is certainly true, but division of labour has its bad as well as its good side, and we shall have to return to this point in discussing rationalisation.

At the moment we must look at it from another point of view. As the result of specialisation no one nowadays is self-supporting, and the great majority of people produce only one thing, or one small part of a thing, and nothing which they use themselves. Specialisation therefore involves co-operation, since all these specialists depend on each other for the things they require in order to live. Each one must exchange his or her contribution to the work of the world, whether it be laying bricks or sewing buttons on shirts, for the hundred-and-one

things and services he or she needs. Thus modern industry is essentially a co-operative process (though it is sometimes difficult to realise it as such), based on an elaborate system of buying and selling.

The enormous number of exchanges involved could not be carried through by barter—clearly an upholsterer, for instance, could not directly exchange his share in the making of a chair for the products of the many people engaged in making the food, clothing, and other things that he needs. There has therefore gradually been perfected the use of money, that is, of a medium of exchange, which is accepted by people in return for their work because they know that they can in turn exchange it for the products of the work of others. Thus within the limits of his spending power, everyone has a free choice of what he will buy, instead of being limited by the clumsy method of barter. Money in this country takes the various forms of coins, notes, cheques, and bills of exchange. Since the war notes, now issued by the Bank of England, but regulated in amount by Act of Parliament, have taken the place of the sovereign, and silver and copper coins only remain. Cheques drawn on the banks are used to a much greater extent in Great Britain than coins or notes. Practically all our gold is held by the Bank of England, as a reserve behind its notes, and for export when required by traders in making payments to foreign countries. Gold is used, however, for only a small proportion of such payments, and by far the larger part of the buying and selling between traders in different countries is carried on by bills of exchange, which are much like cheques. This very important part of the modern economic system cannot be further con-

sidered here, and some reading on the subject is therefore suggested in the book lists.

The business of buying and selling itself in turn involves specialisation. Each article in its progress from the raw material to the hands of the consumer goes through many stages, all probably under the control of different firms. At each stage the manufacturer needs to buy many different things—materials, machinery, fuel, etc., coming probably from different parts of the world. He would find it very difficult to deal directly with the producers of all these things, even with the use of money; while for the consumer again it would be impossible in most cases to deal directly with the manufacturer, especially as each may be in a different country. This work of linking up the different parts of the process of production must be done by the specialist: at each stage, therefore, of manufacture, and between manufacturers and consumers, there are merchants or middlemen, the term including the retailers through whom the goods finally reach the consumer.

Given a high degree of division of labour, and a large amount of trade between countries, the work of the merchant is necessary. There must be some means of connecting together innumerable units if the industrial system is to function at all; and in addition to this work of organisation the merchant, to a large extent, acts as the eyes and ears of the manufacturer in estimating what the demand for his goods and the supplies of his materials are likely to be.

It does not follow, however, that this work is done as economically as it should be. On the contrary, there is much unnecessary buying and selling, and many more people engaged in it than

there need be. It was largely to cut out such wastes, to enable the consumer first to deal direct with the wholesaler, and then to buy, even to produce, his own materials, and to work them up into manufactured goods, that the Co-operative Retail Societies were built up, and that they launched out into their present multifarious activities.

Private enterprise shows to-day a similar tendency to economise. The larger retail businesses, such as the multiple-shop firms, buy much of their goods direct from the manufacturers, while the small retailers buy mainly from wholesalers. In Chapter III certain advantages of the big firm in buying its materials and in selling its goods were pointed out, and some at least are due to the fact that it can afford to do for itself, without loss of efficiency, work which is otherwise done by middlemen, for a separate profit. The same principle is seen in the development of vertical combination, with the closer linking-up secured between the different stages of production by bringing them under one control. A good example of amalgamation partly at least for the purpose of securing such economies is that which has taken place recently between Lever Brothers and other firms. The interests of Lever Brothers already included the manufacture of soap, candles, margarine, etc., together with the production of the raw materials thereof. It amalgamated with the Margarine Union, which had previously acquired Jurgens and Van den Berghs, margarine manufacturers, and also controlled four multiple-shop grocery companies. The new firm resulting from the amalgamation, Unilever, has now brought together in a new company, Allied Stores Ltd., these four companies and two others

(the six are the Home and Colonial Stores, Meadow Dairy, Maypole Dairy, Pearkes' Dairies, International Tea Stores, and Lipton's). Thus there has been formed by amalgamation a complete vertical combine, with a chain of retail shops to sell its wares.

The marketing of fish and of agricultural produce shows clearly the wastes of the individualist system. In both there is too big a gap between the price received by the producer and that paid by the consumer. Of the marketing of agricultural products a Government committee (the Linlithgow Committee) said in 1924 that, "taken as a whole, distributive costs are a far heavier burden than society will permanently consent to bear." No doubt an important reason for this is the small scale on which much of both agriculture and fishing is carried on. For instance, in Great Britain, nearly half the total area of agricultural land is farmed in holdings of between one and one hundred and fifty acres only. One method of overcoming the resulting weakness in sales organisation, and the higher transport rates for small quantities of produce, is through co-operation; but this is still relatively unimportant in this country, and in agriculture has declined during the last ten years or so.

Reading:
LEHFELDT. *Descriptive Economics*, Chap. IX.
WITHERS, H. *Money*. Benn, 1927. 6d.

For discussion:

1. Make a list of the specialised workers, manual and non-manual, engaged, for instance, in the building of a house, or in any industry which you know well. In what way does this subdivision make for better quality of work, and increased output ?
2. How, and to what extent, do the Retail Co-operative Societies save in middlemen's charges?

3. Compare the prices received by market gardeners and fishermen for their produce with the prices charged by retail shops in the town. Find out if possible how the difference is accounted for.

CHAPTER VI

POWER AND TRANSPORT

MODERN factory production, mining, and transport are based on mechanical power, whilst in agriculture it is gradually displacing the work of men and of horses. Cheap and reliable mechanical power is, therefore, one of the fundamental needs of modern industry. Until comparatively recently steam was practically the only form of power—hence the immense importance to Great Britain of the fact that she has large supplies of good coal. Steam as a driving-power is now giving place in many directions to oil and electricity, which are cleaner in use, less wasteful, more easily regulated, and in general cheaper. In Great Britian the number of units of electricity generated in 1921 was just over 5000 million, while in 1929 it was nearly 11,000 million. The world output rose from about 150,000 million units in 1924 to over 300,000 million in 1929; and each year since 1924 nearly 90 per cent. of all new manufacturing plant in the world has been electrically driven. Electricity is generated either by water power or by steam raised from coal; so that only where it is generated by water-power does it displace coal, and in Great Britain the water-power available for the purpose is small. On the other hand, a ton of coal used for the generation of electricity produces more power than a ton used for

driving machinery directly by steam. At the same time, economies are continually being made in the use of coal for fuel, as in the production of iron and steel; and it is important to consider what is likely to be the effect of these developments on the mining industry.

Oil, the world production of which more than doubled between 1915 and 1926, is also a serious competitor with coal, especially as the motive-power of ships. In 1914 nearly 89 per cent. of the world's merchant fleets used coal, and in 1927 only 62 per cent.; the remainder, apart from a few sailing vessels, being driven by motors, or by oil. Of the new ships launched in 1929, only 39 per cent. depended solely on coal.

The next question is, who controls the sources of our power? The mining of coal is entirely in the hands of private enterprise, and in 1923 there were 2902 mines, worked by 1601 different companies. The Royal Commission on the Coal Industry, 1925, stated that production is, in many cases, on too small a scale, and that amalgamation to form larger companies would result in a lowering of the cost of production, and in greater efficiency generally. Very little has been done since then to carry out this recommendation, and the Coal Mines Act of 1930 therefore provides for amalgamation by compulsion. The Coal Commission also stated that there should be a closer connection between coal mining and the industries using coal, such as those engaged in generating electricity, proposing, to this end, the establishment of a National Fuel and Power Committee, with advisory powers. Some people, however, consider that real efficiency in the mining and use of coal will only be secured by the establish-

ment of a great combine, covering the whole country; whilst many others think that the solution lies in a comprehensive scheme of State ownership, including not only the mining of coal, but also the production of electricity.

Practically the whole of the fuel-oil and petrol we use is imported, a very small proportion only coming from the Scottish shale mines. The carbonisation of coal at present yields a certain amount of motor spirit, and it was stated by the Committee on Industry and Trade in 1928 that "if it were possible to submit to the process of carbonisation the bulk of the coal now consumed in the raw state (about four-fifths of the total), the greater part, at least, of our present requirements of oil could be supplied from home sources instead of being imported from abroad." Much further investigation is needed along these lines. The larger part of the oil trade of the world is under the control of four great combines—the Royal Dutch-Shell, Burmah Oil, Anglo-Persian, and Standard Oil Companies—which work in association.

In Chapter II figures were given showing that considerably more than half the production of electricity in Great Britain is in the hands of local authorities. Electricity companies are responsible for the larger part of the remainder, while a certain amount is produced by railway companies, mining companies, and other concerns, for their own use. Many generating stations are too small for efficient working, and, with the growing importance of electricity, the State has been compelled to take a larger part in the development of the industry on up-to-date lines. The Electricity Supply Act of 1926 provided for the setting up of a Central

Electricity Board for Great Britain, appointed by the Minister of Transport. This Board does not itself produce electricity, but controls the supply of electricity from generating stations to the concerns responsible for distributing it to the users—that is, it owns and controls the main transmission lines. It also has the duty of replacing the large number of small power stations by a limited number of large stations, capable of supplying electricity over wide areas. The Act is thus an important step in the development of an up-to-date electricity system on national lines; but on the whole Great Britain is still behind other industrial countries, especially Germany, in the supply of power.

No less important than power to modern industry is the provision of cheap, quick, and reliable means of transport, by sea, rail, inland waterways, roads, and air. Without this the development of foreign trade, except in luxuries, would have been impossible; and equally impossible would have been the production of goods on a large scale, since this depends on the sale of output over a very wide area.

Taking first transport by sea, Great Britain was for long the leading shipping country of the world. It is estimated that before the war British ships carried over half the total sea-borne trade of the world, and, though the war helped to increase ship-building by certain other countries, Great Britain is still the largest ship-owning and ship-building country. In 1929 the world total of sea-going merchant ships amounted to just under 63 million tons, and of this Great Britain owned nearly one-third. Of the new ships built in the world during 1929 over half were built in British yards.

The speed and cost of transport by sea depends,

of course, partly on the speed and cost of loading and unloading cargoes, that is on facilities at the ports. Of the docks and harbours of Great Britain a few are under the control of Government Departments, some are owned by railway companies, but the larger number are worked by Local Authorities, or by public bodies specially appointed for the purpose, and not trading for profit. The Port of London Authority and the Mersey Docks and Harbour Board, for example, are bodies of traders and representatives of Government and public bodies; the Bristol docks are owned by the municipality; the South Wales ports are under the control of the Great Western Railway Company. In some cases, large alterations are necessary in order to bring ports up to date, and so provide the most efficient service.

By the Railways Act of 1921 the numerous railway companies were formed by amalgamation into four large groups, each under the control of a separate joint-stock company. The railways are, therefore, privately owned, and are worked for private profit; but the rates charged are regulated by an independent body, the Railway Rates Tribunal, set up under the Railways Act. In many respects the British railways are more efficient than those of other countries, but frequent complaints are made by traders that the rates for the carriage of goods are too high. It may be considered here whether "trustification" has done anything to improve the service, and whether nationalisation is necessary in order to bring it really up-to-date, in efficiency and cost.

There are nearly four thousand miles of canals and canalised rivers in Great Britain, of which over a

quarter is owned by the railway companies. In general the canals have been allowed to fall into a very bad state, but if they were modernised they could be used profitably for certain kinds of heavy goods traffic, and so relieve the railways and roads.

The roads are, of course, a very important part of the transport system for both passengers and goods, increasingly so since the great development of motors. In Great Britain they are a public service, the County Councils and County Borough Councils being responsible, under the Local Government Act of 1929, for most of the mileage, and non-County Borough and Urban District Councils for the rest. A general supervision is exercised by the Ministry of Transport, and grants for the upkeep and improvement of roads are provided out of the Road Fund, already referred to. Much has been done in recent years to improve the roads, but there is still room for further improvement.

Commercial flying, for the carriage of passengers, letters, and goods, has developed rapidly during the last few years, but is still unimportant in comparison with other forms of transport. British air lines have the best record in the world for regularity of service. They are not yet a paying proposition, and, in common with the lines of nearly all other countries, receive a subsidy from the State.

In the transport system of the country generally there is great need for the closer linking up of the different forms of transport, so as to avoid unnecessary and wasteful competition, and to secure that, in the carriage of goods especially, each shall undertake the kind of service for which it is best fitted. Something is now being done to secure greater co-operation as between the railways and road

transport as the result of the Railways (Road Transport) Act of 1928, which gave the railway companies general powers to act as road carriers. In so far, however, as this is likely to solve the problem, it opens up the possiblity of a transport monopoly operated by private enterprise.

Reading:
LEHFELDT. *Descriptive Economics*, Chaps. VII and VIII.
Report of the Royal Commission on the Coal Industry, Vol. I. Stationery Office, 1926. 1s.
Coal and Commonsense. Labour Publications Department, 1926. 2d.
WOOD and STAMP. *Railways*. Home University Library, 1928. 2s.

For discussion:

1. Discuss and criticise the scheme for the nationalisation of coal-mining and power supply put before the Coal Commission in 1926 by the Miners' Federation of Great Britain. (See *Coal and Commonsense*, and the *Report* of the Commission.)
2. Would nationalisation of the railways, canals, docks, and of road transport be the best method of building up an efficient transport system, or would you suggest any other?

CHAPTER VII

THE RATIONALISATION OF INDUSTRY

RATIONALISATION is to some people, politicians as well as "captains of industry," a blessed thing, the wholehearted pursuit of which will solve all our economic problems; to others it is an irritating new-fangled device, disturbing comfortable business traditions; to others again, especially the worker whom it displaces from his job, it is a thing to be abhorred and resisted. What is the right attitude to take will not be suggested here, as that is a problem much better left to discussion; but some of the necessary facts will be outlined, and certain

definite questions raised, answers to which must be part of any sound conclusion.

First, what does "rationalisation" mean? The soundest of the many definitions given seems to be that adopted by the World Economic Conference held by the League of Nations in 1927, and endorsed by the conference between the General Council of the Trades Union Congress and Lord Melchett's Group of Employers in 1928. The full definition is given in the Interim Report of the Conference (quoted in the *Labour Year Book*, 1930), but rationalisation is briefly defined as "the methods of technique and of organisation designed to secure the minimum waste of either effort or material. It includes the scientific organisation of labour, standardisation both of material and of products, simplification of processes and improvements in the system of transport and marketing." Rationalisation is thus a many-sided movement, the main purpose of which is to avoid waste, of land, of human labour, of materials, of power: to secure, that is, the largest possible output from each hour of human labour, each unit of materials and of power, each acre of land. The main elements which enter into it in its complete form may be summed up thus:

(1) The increase in efficiency of the individual worker, by means of scientific selection of workers for different kinds of work (vocational selection); the study of methods, so as to cut out unnecessary movements, for instance in brick-laying; attention to lighting, ventilation, height of tables, etc.; the adjustment of hours, and the arrangement of "rest-pauses," to reduce fatigue. With this goes increased sub-division of work, specialisation.

Under this head should also be included welfare

work, such as the provision of canteens and playing fields, the purpose of which is partly to improve the health and so the efficiency of the workers, partly to create better relations between employers and employees; and methods of payment, such as bonus systems and co-partnership schemes, which are intended partly to increase output directly, partly, again, to create better relations between employers and employees.

(2) The replacement, wherever it is possible and worth while, of human labour by machinery, such as the addressing and calculating machines now used in many large offices.

(3) Improvements in the internal organisation of the factory or office, including the construction of the building, the planning of work so that workers are not kept waiting for tools and materials, and exact costing. An up-to-date tea factory, for instance, is so constructed that the tea in its raw state is taken from the warehouse to the top of the building, thence passes downwards from floor to floor as it goes through the different stages of preparation, and from the ground floor is taken direct to lorries, done up in packets ready for the shop counter.

(4) Standardisation of output, the development of "mass production"—the production, that is, of large quantities of things on exactly the same pattern, so that work can be reduced more and more to routine. As an example of this, the manufacturers of stoves and kitchen ranges in the United States in a short time reduced the number of varieties they produced from nearly 3000 to 364.

(5) Economies in the use of materials, fuel, and

power, for instance in the amount of coal used in smelting iron and steel.

(6) Combination between firms, in the different forms described in Chapter IV, for the purpose of cutting out competition, securing the advantages of large-scale production, and bringing under one control all the stages, from the raw material upwards, of the making of a given article.

(7) The building up of an efficient transport system, and improvements in methods of buying materials and marketing goods.

It is sometimes imagined that the rationalisation idea sprang full-fledged into being after the war. Actually, the process was going on long before the war, partly in the form of "scientific management" (the methods of increase of efficiency described under (1) above), partly in the form of combination, and in other directions. It was hastened by the war; and certainly it has been much intensified by the post-war depression. It is now influencing to a greater or less degree practically every country, and every form of economic activity, including not only all kinds of manufacture, but also commerce, transport, banking, insurance, mining, and agriculture. The reasons for its development, for the stress, too, which is to-day being laid on the need for rationalisation, lie in the very nature of modern industry, and this should be carefully considered in discussing the attitude to be adopted towards it. Two main points must be mentioned. First, the growth of the scale of production, and the spread of industry throughout the world, has intensified competition for markets and for materials; thus leading to combination between firms, and to constant efforts to increase competing power by

cutting down costs. Secondly, science has opened up vast new possibilities, in the use of machinery, chemicals, etc.; and changes in methods of work and in business organisation are necessary if advantage is to be taken of them.

In general, Great Britain is behind other industrial countries, especially Germany and the United States, in the application of rational methods to industry. To give one example only of what has been done in Germany: the Steel Trust, formed in 1926, with a capital of £46 million, operates iron and coal mines, coking and by-product plants, iron foundries, steel furnaces, quarries, and rolling and tinplate mills; in 1927 its output of coal was 26 million tons, and of steel seven million tons; the less efficient works have been scrapped, the highest possible amount of labour-saving machinery introduced, output has been standardised, great economies made in the use of fuel, and other drastic changes carried through. Many of the necessary improvements in British industrial methods, some of which have been mentioned in this book, as for instance in the supply of electrical power, would be part of a general process of rationalisation. Such a general process should view the economic life of the community as a whole, including transport and power, the position of agriculture, and the possibility of a great and permanent change in our foreign trade, suggested in Chapter I; and should attempt to plan it on rational lines, in relation to the economic life of the rest of the world. So far, however, rationalisation has been carried on piecemeal, by individual firms and groups of firms, and little part has been taken by Governments, except in Russia. In no country except Russia has there been any

serious national planning, though slight beginnings have been made in Great Britain, for example, in the appointment by the Government of the Economic Advisory Council. As a result of this, little or no account has been taken of the effects of rationalisation on the workers concerned, or on the life of the community generally. The more important of these effects may be summed up thus, and left for discussion:

(1) Many forms of combination undoubtedly cut out certain evil effects of competition, such as, for instance, the lowering of the quality of goods in order to reduce prices, and the waste of overlapping selling organisations. They also do much to increase the efficiency of production and trade—especially is this true of vertical combination. On the other hand, combination often leads to the raising of prices against the consumer; and on the whole, by increasing the bargaining power of capitalists, tends to make the division of incomes more unequal, as between the larger owners of capital and the rest of the community. The tendency towards the monopolistic control of the press, and the political importance of big business, must also be taken into account.

(2) Rationalisation improves in many ways the conditions of work, for instance in factory production, and results in the handing over to machines of much hard, unpleasant and monotonous labour, such as the charging of steel furnaces and the addressing of envelopes. On the other hand it tends to increase the strain of work, when the pace is set by the machine; while specialisation increases monotony, and in general takes away from the mass of workers all initiative, making them more and more cogs in a great machine.

(3) The *immediate* effect of rationalisation is very often to displace workers, and no doubt many examples of this will be known. A much more serious problem is whether it is likely to lead to a long-continued increase in unemployment. It is argued that reduction in costs of production through rationalisation will make possible a reduction in prices, cause increased demand, and so before long result in an *increase* in employment. This actually happened, for instance, in the German steel industry, after the drastic reorganisation described above had been carried through. As against this, however, will the creation of monopoly through combination tend to keep up rather than lower prices? Even if it does not, since the main purpose of rationalisation is "to secure the largest possible output from each hour of human labour, each unit of materials and of power, each acre of land," will the resulting increase in capacity to produce outstrip the buying power of the community, and so create a permanent large volume of unemployment?

(4) Another very important problem is the position of the Trade Unions. Will it be possible for them to take effective action against the great power of the combines? In face of the concentration of the power of capital, is greater unity of organisation necessary in the Trade Union movement? Further, if rationalisation, especially the first, second, and third of the elements in the process described above, is to be carried out effectively, and with the least possible hardship, the voluntary co-operation of the workers is essential. Will an attempt be made to secure this by the formation, by the companies themselves, of what are generally called "company unions," mere appendages of big

business? Or will it be secured by the Trade Unions, as independent bodies, obtaining a real share in the control of industry?

(5) Finally, the effects of rationalisation on the consumer must be considered—not only through prices, but also through standardisation, which, for the mass of the people, who must buy as cheaply as possible, may limit choice, and make life a dead level of monotony.

This statement of the good and the bad in rationalisation brings one back to the question of control in the interests of the community. The structure of modern industry includes no central authority linking up and controlling its different parts. But the "national planning" suggested above requires some such authority. Could it be achieved by means of a super-trust? If so, would this view the effects of rationalisation in relation to the welfare of the community? Or is the alternative a much greater control by the State over the economic affairs of the nation?

Reading:

Tudor Davies, W. *The Rationalisation of Industry.* Pioneer Publicity Service, 1928. 2s.

The Labour Year Book, 1930, Section 3, for a review of rationalisation.

It is most important that, in addition to reading, visits should, if possible, be made to up-to-date factories and works by those students who have not first-hand knowledge of modern industrial methods.

For discussion:

Instances of the process of rationalisation should be collected from personal experience, their effects studied from the point of view of the worker and the consumer, and especially any displacement of workers noted.

Apart from this, the many questions raised in this chapter will provide more than enough material for discussion, and are intended for that purpose. To them, however, must be added one more:

What are the possibilities of rationalisation within the Co-operative Movement, such as the amalgamation of Societies? And what is likely to be the effect on the Movement of the more intense struggle which can be foreseen between Co-operation and private enterprise, with the growth of multiple shops, control of raw material by combines, and so on?

CHAPTER VIII

THE STATE AND INDUSTRY

THE successes of the Industrial Revolution led last century to the triumph of the belief in freedom of competition, with the minimum of interference by the State with the working of industry. This belief in what is usually known as *laissez-faire* is defined by J. M. Keynes (in *The End of Laissez-Faire*) as "the doctrine that State action should be narrowly confined and economic life left, unregulated so far as may be, to the skill and good sense of individual citizens actuated by the admirable motive of trying to get on in the world." It is not by any means dead, and many people still believe that the "captain of industry," the man of great ability and disciplined imagination, will, if left free from interference, guide the forces of production in such a way as to gain the maximum return in real wealth; thus, while seeking his own profit, making for the greatest welfare of the community, bearing meanwhile its risks and anxieties. It was recently stated, for instance, by a group of well-known business men that "the control of economic forces by political means violates every principle on which British prosperity was founded, is alien to the free instincts of the national character, and ought only to be used, if at all, within

the narrowest limits." As against this, of course, it may be argued that rationalisation is the direct opposite of the older type of business individualism; that, as it develops, it will not leave much room for the "free instincts of the national character"; and that, in any case, freedom and initiative are realities for few people to-day.

Laissez-faire, though still important, is no longer the ruling theory of the relations between the State and industry; but, even when it was, hard facts, the wastes of free competition, and the immense social evils which followed the growth of industrialism, compelled the State to take action in the interests of the community. For many years before the war, intervention in industrial affairs was growing, and to-day it is very extensive, ranging for instance from the marking of eggs to the actual productions of goods and services by public bodies.

Though many glaring evils remain, much is now done for the protection of wage-earners against both the greater power of the owners of land and capital, and those industrial risks for which the individual cannot provide. Here State action includes, for example, the regulation of hours and wages, restrictions on the employment of women and children, regulations for the prevention of accidents and of unhealthy factory conditions, the compulsory provision of unemployment insurance and of workmen's compensation. It is recognised, however, that efforts to raise the standards of work in one country are hindered, and may even be checked altogether, by the existence of lower standards in countries competing with it in the markets of the world. The International Labour Organisation was therefore set up under the Treaty

of Peace of 1919, as part of the League of Nations, to secure international co-operation in the raising of labour standards. In the work of this body, representatives of the Governments, and of the organised workers and employers, of those countries which are members of the League of Nations, take part, and enough has already been done to show that it is likely to have an important influence on industry throughout the world.

While the State has, so far, taken less notice of the interests of consumers than of wage-earners, it has not neglected them altogether. It protects the consumer in certain directions against the activities of private enterprise, for instance by maintaining the purity of essential foodstuffs, such as milk; and by watching the prices of food, such as bread, milk, and meat, through the Food Council, set up in 1925. Further, it has been found necessary for public bodies themselves to provide certain goods and services which either it would be dangerous to leave to private monopoly, such as the postal services; or which, because they do not pay, would not be supplied by private enterprise, such as the roads; or in which private enterprise has failed, as in the building up of a national system of electricity supply. These activities have been referred to in Chapter II, where it was pointed out they are as yet very limited in extent. In the case of many important services in a position of monopoly the method has been adopted of leaving capital in private hands, but exercising a degree of public control over its use. This is done by means of the statutory company, which is a joint-stock company, set up by Act of Parliament, with certain special rights, but working under certain special

restrictions, for example on the rates charged to the public. Examples of statutory companies are the railway companies, and gas and electricity companies.

Even in the days of greatest freedom for the capitalist, the State intervened for the safeguarding of property rights, legislating, for instance, for the observance of contracts, and the proper conduct of the affairs of joint-stock companies. It was also compelled quite early to regulate certain money matters, restricting especially the right of the banks to issue notes.

In addition to taking action in industrial affairs in order to redress the balance of economic power somewhat in favour of wage-earners and consumers, the State in a number of ways assists private enterprise in the conduct of its business. Considerable sums of public money are spent, for example, on research, by the Ministry of Agriculture and Fisheries, by the Department of Scientific and Industrial Research, and by other bodies. Public money is also used on occasion to subsidise private enterprise, as in the case of beet sugar, and of the mining industry in 1925–26. In the interests of the foreign trade of the country the State supplies commercial information to traders, through the Department of Overseas Trade of the Board of Trade, and the Colonial Office; it guarantees trade credits in approved cases; it attempts to protect home industries from foreign competition, under the Merchandise Marks Act, 1926, by which imported goods may be compelled to show the country of origin, and by placing duties on a small number of imports, under the Safeguarding of Industries Acts.

This statement is by no means complete, but it

serves to show what a very important part the State now takes in industrial affairs. Its intervention so far has depended on convenience and necessity, rather than on the working out of general principles, and when questions of principles are raised there are, as already pointed out, very great differences of opinion. Should the State in future exercise even greater control, including the planning of the economic life of the country, so as to prevent the waste and muddle which at present so often prevail? Should it go further than this, and become the chief owner and user of land and capital? Or will a rationalised private enterprise do all that is required to improve the structure and working of modern industry?

Reading:
LEHFELDT. *Descriptive Economics*, Chap. XII.

Reading references to cover the subject-matter of this Chapter would be too numerous to give here. Material will be found in Robertson's *The Control of Industry*, in the books included under the heading "Future Developments," in the Note on Books, and scattered about in many other publications mentioned. Reading on public enterprise in particular is given at the end of Chapter II, and in the Note on Books. Pamphlets on the International Labour Organisation can be obtained from the London Office of the I.L.O., 12 Victoria Street, S.W.1.

No questions are suggested for discussion, as more than enough are again raised in the Chapter itself.

A NOTE ON BOOKS

AN attempt is made at the end of each Chapter to suggest short, cheap, and plainly written books for further reading. Lehfeldt's *Descriptive Economics* is used more or less as a text-book, but apart from this it is often very difficult, sometimes impossible, to find suitable books, as for instance on foreign trade.

There follows here an additional list, grouped according to subjects. This is not by any means a complete course of reading, but it is intended as an aid to those who, having studied the elements of the Structure of Modern Industry, wish to go more deeply into it, and also to read something on closely related subjects.

It is important for the student to read some short general text-book of Economics in order to understand the relation of the Structure of Modern Industry to economic problems such as the division of income. There may be suggested Clay's *Economics for the General Reader* (Macmillan, 1916, 4s. 6d); or J. A. Hobson's *Science of Wealth* (Home University Library, 1918, 2s.); or Gough's *Wealth and Work* (Philips' New Era Library, 1925, 2s. 6d). The two last deal mainly but not entirely with the division of income.

General:

BARRALET, A. *The Machinery of Business.* Philips' New Era Library. 2s. 6d.

A popularly written and useful description of business methods, from the point of view mainly of a merchant firm, trading from London all over the world.

LEE, R. H. L. *Industrial Production.* Nelson, 1928. 3s. 6d.

Contains useful chapters describing in some detail the organisation of industry, especially the factory system. Many readers will probably, however, disagree profoundly with some of the views expressed on the underlying principles of the industrial system, for example on the relations between the capitalist and the worker.

ROBERTSON, D. H. *The Control of Industry.* Nisbet, 1923. 5s.

A general discussion of the structure of the economic system, and of its control.

Industrial and Social History:

BEALES, H. L. *The Industrial Revolution*, 1750–1850. W.E.A. Outlines. Longmans. 1s.

WATERS, C. M. *Economic History of England*, 1066–1914. 2 vols. 7s. 6d. each.

COLE, G. D. H. *History of the British Working Class Movement*, 1789–1927. 3 vols. 6s. each.

Foreign Trade:

BASTABLE, C. F. *The Commerce of Nations*. Ninth Edition. 6s.

A straightforward book on the principles of trade between countries.

No attempt can be made to suggest books dealing especially with the free trade and protection controversy, but there is some discussion of our foreign trade policy in the books given under the heading "Future Developments."

Agriculture:

MAXTON, J. P. *A Guide to Agricultural Policy*. Ruskin College, Oxford, 1929. 6d.

A summary of the position of agriculture in Great Britain, and of the main policies suggested for dealing with it; with a comprehensive list of books and Government publications on the subject.

Public Enterprise:

There is no comprehensive recent account of the scope and methods of public enterprise, though there are plenty of books written for and against its extension. Up-to-date material must be sought in periodical publications, such as the *Labour Year Book* and the *Labour Bulletin*. The following books are useful, though they were written some years ago:

ADDISON, C. *Practical Socialism*. Labour Publishing Co., 1926. 2 vols. 1s. each.

DAVIES, EMIL. *The State in Business*. Bell, 1920. 5s.

WARREN. *Municipal Trading*. Labour Publishing Co., 1923. 1s.

Co-operation:

MADAMS, J. P. *The Story Re-told*. Co-operative Union, 1921.

WEBB, C. *Industrial Co-operation*. 1917.

WEBB, S. and B. *The Consumers' Co-operative Movement*. 1921.

WOOLF, L. S. *Co-operation and the Future of Industry*. 1918.

The People's Year Book. Co-operative Wholesale Society, 1 Balloon Street, Manchester. 2s.

A *Review of Co-operative Statistics* is published annually by the Co-operative Union, and can be obtained from Holyoake House, Hanover Street, Manchester. Price, 3d.

Combines:

A list of books is given in *Capitalist Combines*, by G. M. Colm: To this may be added: Levy, H., *Monopolies, Cartels, and Trusts British Industry*. Macmillan, 1927. 14s.

The *Labour Bulletin* has notes each month on the formatior new combines, as well as articles from time to time on comb in special industries, such as oil.

Money and Banking:

WITHERS, H. *The Meaning of Money*. Fifth Edition. Murray, 19 6s.

A popularly written and reliable account of the forms money, the operations of the banks, and the methods which payments are made in foreign trade.

LEHFELDT, R. A. *Money*. Oxford University Press, 1926. 2s '

Covers much the same ground as *The Meaning of Money*, also includes chapters on the influence of money on prices.

DAVIES, EMIL. *The Money and the Stock and Share Markets*. Pitma 1920. 2s.

Deals briefly with banking and foreign payments, main with the forms of securities and Stock Exchange operations

Trade Unionism:

CITRINE, W. M. *The Trade Union Movement of Great Britai* International Federation of Trade Unions, 1926. 1s. 6d.

Mainly descriptive of the movement to-day, but includ two chapters on its history.

CREECH JONES, A. *Trade Unionism To-day*. W.E.A. Outline Longmans, 1928. 1s.

LLOYD, C. M. *Trade Unionism*. Black, 1928. 5s.

Combines history and description.

CITRINE, W. M. *Trade Unionism in Modern Industry. Future of Tra Unionism*. Trades Union Congress, 1929. 2d. each.

Rationalisation:

URWICK, L. *The Meaning of Rationalisation*. Nisbet, 1929. 7s. 6

MEAKIN, W. *The New Industrial Revolution*. Gollancz, 1928. 9

Largely a description of rationalisation in Germany.

JENKINSON, M. W. *Some Aspects of Rationalisation. Some Danger of Rationalisation*. Gee, 1929. 1s. each.

Future Developments:

Final Report of the Committee on Industry and Trade. (Balfour Con mittee.) Stationery Office, 1929. 5s. 6d.

Britain's Industrial Future. Report of the Liberal Indust Enquiry. Benn, 1927. 2s. 6d.

COLE, G. D. H. *The Next Ten Years in British Social and Econo Policy*. Macmillan, 1929. 15s.

J. AND J. GRAY, PRINTERS, EDINBURGH